

## ABSTRACT

An inner syntactic foam insulator and an outer protective cover are co-extruded around a length of pipe. The protective cover is then rapidly solidified to retain the syntactic foam insulator in a desired shape about the length of pipe. The protective cover is preferably a thermoplastic or a thermosetting material. One technique for rapidly solidifying the thermoplastic protective cover is to bring the protective cover into contact with a liquid coolant (e.g., water). A thermosetting protective cover is rapidly solidified by heating the cover. According to another aspect of the invention, an inner syntactic foam insulator and an outer protective cover are co-extruded to provide an apparatus comprising the inner syntactic foam insulator encased by the outer protective cover. Advantageously, rapidly solidifying the protective layer provides a hard outer layer that protects the syntactic foam insulator as the insulator cures.